

## *ARHart Consulting, LLC.*

### Health Risk Profile

Re: Israel III, Samuel  
United States v Samuel Israel III, 05 Cr. 1039

DOB: 07/20/1959

ARHart Consulting, LLC was asked to provide at the request of Morvillo, Abramowitz, Grand, Iason, Anello & Bohrer, P.C. (MagLaw) an evaluation of the records associated with Mr. Samuel Israel III. This was completed in order to determine a life expectancy. The effect of his medical history was considered and evaluated to determine the impact of pre-existing conditions upon his life expectancy.

There were 135 pages of medical records and associated documents reviewed and the life expectancy is based upon the information reviewed and provided by MagLaw. A review of Mr. Israel's history is first provided.

Mr. Israel is currently a 48 year old male smoker, (this was verified with Mr. Israel by his attorneys on 3/28/08). The medical history was detailed as pertains to his multiple back surgeries with documentation submitted from his neurologist, personal physician and psychiatrist. The records covered the period of time from May 3, 1977 to February 29, 2008.

There was extensive and complete history related to Mr. Israel's past history of degenerative joint disease, spinal stenosis, herniated disc and spondylosis which have resulted in a total of nine surgeries beginning in 1988. There was discectomy on May 3, 1988 with follow-up lumbar spinal surgery to remove bone fragments from lumbar 4-5 vertebrae on May 31, 1988.

Due to recurrent herniated discs and continued inability to function without considerable pain as well as to effectively perform his daily functional obligations, a laminectomy was performed on July 23, 1993. Mr. Israel continued to experience significant back pain and on May 21, 1996 a herniated disc was removed from Mr. Israel's neck along with a spinal fusion and replacement of degenerated bone with cadaver bone.

Additional testing in the form of a myelogram of the spinal canal was completed July 10, 2000. The results of this showed disc bulges and herniation at the basis of his neck, mild cord flattening and herniation in the thoracic spine and severe stenosis in the lumbar region. Mr. Israel was experiencing extreme, acute pain. A second opinion was sought from Mr. O'Leary regarding his neck on July 22, 2000. Mr. Israel was experiencing worsening pain – tingling in his fingers, right arm weakness's and the feeling of neck "instability". He was having balance problems and difficulty with his writing. The opinion provided was that Mr. Israel would find benefit from decompression surgery and cervical fusion. At this time he was referred to a neurologist, Dr. Tsairis for completion of nerve studies. [Grab your reader's attention with a great quote from the

document or use this space to emphasize a key point. To place this text box anywhere on the page, just drag it.]

Dr. O'Leary's physical exam showed vital signs of height 70" (5.10), weight 210 and blood pressure of 130/80. No other physical findings were noted from the examination. Electrocardiogram was done at this time with the only finding that of intraventricular conduction defect (IVCD).

Family history was noted with Mr. Israel's father having diabetes and his mother having cancer in 1993. His social history noted prior smoking history, but date discontinued was not provided, although physician states years ago. Mr. Israel described himself as drinking alcohol rarely two drinks at a time. His medication was listed as Zylprim for elevated uric acid, Neurontin for pain, Elavil for mood disorder ad pain, Hydrocodone for pain and Vioxx for inflammation.

Dr. Tsairis' evaluation was completed August 10, 2000 with the finding of cervical stenosis the symptoms of which were presenting as arm weakness, neck pain and tingling in his fingers. The recommendation was that the previously recommended decompression and cervical fusion recommended by Dr. O'Leary would be appropriate. An additional significant finding noted by Dr. Tsairis was that of severe spinal stenosis in the lumbar region of his back. Dr. Tsairis also noted that Mr. Israel was a current smoker of five cigarettes per day, which is a contradiction from information noted in Dr. O'Leary's exam.

Mr. Israel saw Dr. Gerald Bahr 9/13/2000 for a general evaluation to determine if there were any contradictions to the proposed surgery. He was cleared for the surgery performed on September 19, 2000 by Dr. O'Leary during which several procedures were done to alleviate Mr. Israel's pain. He was see in regular follow-up on 10/2 and 11/21, 2000. The results of the surgery were considered successful with Mr. Israel receiving significant improvement. It was noted at this time that future surgery would be necessary to address the severe lumbar stenosis.

It was an additional two years before Mr. Israel had an additional neurological consultation, this time with Dr. Gerald Smallberg on October 17, 2002. The consultation was precipitated by chronic low back pain that had been, for some time increasing in intensity to a level of 8-9/10 with radiation down to his right leg. Dr. Smallberg's recommendation was that repeat spinal surgery would most likely be necessary. Test results include a myelogram of Mr. Israel's spinal cord on November 6, 2002 with the following findings: cervical disc bulge, narrowing of the spinal cord (felt to be congenital), four small herniations of the thoracic spine with reduction of previously seen large herniation. The lumbar spine continued to show severe stenosis and disc bulge. Another consultation with Dr. Bahr on December 20, 2002 detailed additional past medical history of bipolar disorder, remote seizure disorder and pyuria. His medication was noted as Depokote, Neurontin, Lithium, Wellbutrin, Zoloft and Allopurinol. EKG showed occasional ventricular premature contractions (VPC's). Chest x-ray was normal. Mr. Israel was noted to be smoking around five cigarettes daily. Vital signs were 5.10 with weight having increased to 225 lbs. Ultimately, there were three separate surgeries done to alleviate the conditions identified, the first on 1/7, the second on 1/14 and the final one on 1/15/2003.

Mr. Israel continued to experience very unfortunately, severe pain resulting in a visit to the emergency room on 6/20/2003. Following this, Dr. O'Leary again referred him to Dr. Smallberg for another neurological evaluation. A myelogram of the spine showed stenosis not previously seen on the November 2002 myelogram. Dr. Smallberg discussed possible conservative methods to improve Mr. Israel's condition; however he was ultimately referred back to Dr. O'Leary regarding decompression and stabilization of the lumbar spine. Dr. Smallberg reviewed his history and confirmed past history of bipolar disorder for which Mr. Israel was taking Wellbutrin, Neurontin, Zoloft, Depakote and Lithium. Dr. stated that Mr. Israel appeared to be healthy looking.

One of the reasons for Mr. Israel's recurrent back pain was identified as being the result of fall in the snow 5-6 weeks prior. His symptoms included difficulty focusing, inability to walk well, pain in his back and right leg. Dr. O'Leary's recommended treatment was watchful waiting and an epidural injection. Mr. Israel met with Dr. Smallberg on 7/16 and again with Dr. O'Leary on 7/28 and 9/25, 2003. It was determined that conservative treatment would likely be ineffective and surgical decompression and fusion was to be necessary. On 9/4/2003, Dr. O'Leary performed these procedures which included replacement of existing hardware in his spine.

Mr. Israel continued to experience pain and on 10/28, 2003 was evaluation by Dr. Michael Swirsky regarding degenerative changes in the spine and on 11/3/2003 by Dr. Ferriter. Unfortunately, Mr. Israel was involved in a car accident on or around October 20, 2003 and was experiencing back pain, but no other sequelae. Conservative care was recommended along with regular follow-up.

A follow-up visit on January 13, 2005 had Mr. Israel presenting with new onset sudden pain in his low back. A dorsal spinal column cord stimulator had recently been placed as a method of managing his pain. An abnormal CAT scan done by his primary physician showed some nodularity. CAT scan of pelvis and abdomen were apparently normal. Pain was felt to be muscular and he was status post right shoulder arthroscopy. He was referred back to his primary pain management doctor, his psychiatrist Dr. Weiss.

Mr. Israel was seen May 18, 2006 following failure of the battery on his dorsal column stimulator. His implant had been first placed in 2004, thus it was felt the battery was at the end of its life and needed replacement. He was on Fentanyl patch for pain control.

The remainder of the records reviewed were in the form of summary reports from several other physicians seen regularly by Mr. Israel. Dr. Weiss, his psychiatrist reported that he had been her patient for 6 years. Her report detailed history of depressive disorder, which was noted to be in remission. Chronic pain syndrome since 2002 treated with opioids. Of particular significance is an extensive history of substance abuse including alcohol, marijuana and cocaine. These apparently have been in remission since 1994. There was no further information regarding this issue.

Other significant medical history includes hypercholesterolemia and sick sinus syndrome for which he had a pacemaker implanted in 2004 and gout. These conditions were treated by Dr. Eisner; however only summary information was provided with little detail regarding these issues.

His medication included Fentanyl patch to be converted to morphine or methadone, Zoloft, Lipitor, Aspirin and Allopurinol.

Regarding his depressive disorder Dr. Weiss notes that Mr. Israel was, in 2003, misdiagnosed with bipolar disorder for which he was prescribed Lithium, gabapentin and valproic acid. He was taken off these medications in 2003. His mild depression and anxiety was primarily attributed to the breakup of his marriage in 2003.

The history of substance abuse dates back to when Mr. Israel was in high school. He began using marijuana. He was using marijuana, cocaine, and alcohol excessively until 2000 when he received outpatient treatment. This resulted in his abstinence from alcohol. He received inpatient treatment in February 2003 in order to stabilize his pain medication. Additional inpatient treatment was completed in May 2003 for cocaine and marijuana which he has abstained from since.

Post-traumatic stress disorder was an additional diagnoses which relates to physical abuse by his father.

Dr. Eison, Mr. Israel's internist, provided slightly more information regarding Mr. Israel's cardiac history. A permanent pacemaker was placed in 2004 due to complete heart block. A history of transient ischemic attack with aphasia was also diagnosed in 2004. There was also history of familial hypercholesterolemia with cholesterol values in excess of 300 (normal < 200) and triglycerides greater than 400 (goal of <70). There is also noted history of hyperhomocysteinemia with values greater than 20 (normal <10).

ARHart Consulting LLC was requested by MagLaw to provide a risk assessment on Mr. Samuel Israel as of current date based on the review of the medical information provided. In addition, the effect this history on his continued morbidity and mortality are considered.

Mr. Israel has significant medical history including cardiac disorder with pacemaker, multi-substance abuse with continued use of opiates for control of his chronic pain and transient ischemic attack. Other issues of concern include his hypercholesterolemia and hyperhomocysteinemia which are additional risk factors for coronary disease. The multiple back surgeries are of some concern particularly as relates to continued use of opiates for pain management. The records are inconsistent in documentation of Mr. Israel's smoking status. This too is a very important risk factor and based on the uncertainty of this, his life expectancy is based upon an aggregate – neither smoker/nor nonsmoker.

#### Description of Development of Life Expectancies:

The usual method of computing life expectancies when the health status and profile of an individual is known is to use an appropriate insurance mortality table such as the Society of Actuaries 2001 Valuation Basic Tables (VBT), and apply certain "debits" to the mortality table for a life age "x" with health impairments. Debits are percentages of extra mortality based on one's health profile, with one debit equal to 1% extra mortality above standard, or healthy mortality. Debits vary depending on the severity of the impairments. Using this approach we can make use of medical research on impaired life mortality published by various insurance company resources. Debits are typically taken from recent reinsurance underwriting manuals.

In determining excess mortality of an individual all factors must be taken into account. For purposes of this assessment, Mr. Israel's risk assessment would be a minimum of 150 debits (250% total mortality), which represents a moderate substandard rating if he were applying for a life insurance policy today. These debits applied to a recently published life insurance table would result in an estimated life expectancy between 23 – 24 years.

Anna Hart MS, SRM  
Principal  
ARHart Consulting, LLC  
March 28, 2008

***ADDENDUM to Health Risk Profile of March 28, 2008:***

**Health Risk Profile**

**Re: Israel III, Samuel  
United States v. Samuel Israel III, 05 Cr. 1039**

**DOB: 07/20/1959**

**Current age:54**

ARHart Consulting, LLC was asked to provide at the request of Shane P. Landry, Attorney at Law, LLC (Landry), an evaluation of the medical records and correspondence associated with Mr. Samuel Israel III since 2008. This was completed in order to produce an updated life expectancy. The effect of his current medical history was again considered and evaluated in order to determine the impact of his changing health impairments on his life expectancy.

There were a total of 579 pages of medical records, correspondence and other related documents reviewed. The updated life expectancy is based upon the information reviewed and provided by Landry. In that this is an addendum to the original report, Mr. Israel's earlier history is not detailed with the exception of how it relates to his current condition and how his life expectancy is impacted. The prior report is attached as a reference. His medical history is noted below:

- History of at least 11 back surgeries
- Sick Sinus syndrome with pacemaker (originally placed in 2004)
- Depression
- Anxiety
- Chronic pain syndrome
- Hypertension
- History of opioid addiction
- History of transient ischemic attack (TIA)

- History of coronary artery disease with stent placement in 2008.

There was a remote history of seizure disorder and misdiagnosed bipolar disorder which are not at issue, nor considered in this updated evaluation.

Mr. Israel has been incarcerated since 2008 and was transferred to Butner Correctional Facility in July 9, 2008. There were some transfers within the Butner prison system in 2010. Initially, Mr. Israel's intake history noted chronic health conditions of: obesity, hyperlipidemia, chronic pain syndrome, depressive disorder, dysthymic disorder, unspecified angina pectoris, and cardiac pacemaker. The diagnosis of dysthymic, or bipolar disorder was considered ruled out at several points in the documentation.

Of significance, it should be pointed out that Mr. Israel attempted suicide in an effort to avoid being captured prior to being incarcerated. This attempt involved intake of mass amounts of medication and intake of multiple fentanyl patches. This was obviously an unsuccessful attempt and Mr. Israel was captured and subsequently incarcerated. His mental issues are long standing and are addressed at length further in this report.

There are several issues which are important to update as relates to Mr. Israel's past several years in incarceration. These will be addressed separately by condition in order to explain.

### **Chronic pain syndrome**

This condition has been present for a great many years and treated with a variety of medications including morphine and fentanyl patches. In reviewing the records, initially Mr. Israel's pain is addressed with adequate medication. On August 31, 2011 Mr. Israel was receiving a 100 mg Fentanyl patch every other day in the pill line only. On September 2, 2011 at a pain management visit, he indicated that the stimulator was providing relief and was going to try and taper off the opioids. He was noted to be noncompliant with the medication Gabapentin and was requesting to be taken off Amitriptyline. On September 9, 2011 he was seen in a clinical visit for back pain. A consultation for evaluation for battery replacement of the spinal stimulator occurred on September 27, 2011. There is notation in the Health services record that a Medtronic Tens unit was first placed in 2005 and replaced July 28, 2011. Mr. Israel indicated he did not want any further spinal

surgery. It was felt that the battery change would help, thus this request was made. Fentanyl patch prescription was renewed on September 28, 2011 with application made every other day via pill line only. He indicates that he has in the past been controlled on fentanyl patches however was going to try to discontinue. Surgery was scheduled at Durham Regional Hospital on November 1, 2011 to replace the spinal stimulator battery. He was released same day with the internal Tens unit placed. There were regular Fentanyl patch renewals on October 25 and November 10, 2011. Mr. Israel presented to clinical service on November 23, 2011 with an infection following suture removal by another inmate related to the Tens unit surgery, resulting in cellulitis. He had missed his November 15, 2011 appointment and was advised that the medical unit was always open.

Medication renewal on December 7, 2011 included:

- ASA
- Fentanyl patch 100 mg
- Gabapentin
- Niacin
- Simvastatin

There was regular renewal of Fentanyl on January 6, 2012.

As time passed, the prescribed medication became insufficient at controlling his chronic pain. Throughout he is seen regularly for the pain and is very compliant with the plan. In mid- 2013, Mr. Israel had an episode involving a manipulated fentanyl patch. An investigation was initiated and within several months a decision was made to discontinue his fentanyl patch. While he was not allowed to “testify” regarding this incident, a committee determined he had violated his “pain contract”, thus the fentanyl was to be discontinued. This medication dosage was noted to be between 50 and 100 mg patches which were to be placed every other day by nursing staff. Mr. Israel pain became uncontrollable on the dosage he was prescribed even though other medications were substituted. There was significant progression in Mr. Israel’s pain condition. He became very verbal about needing this medication and that he had been prescribed the fentanyl patches for years without issue. There were multiple conversations noted between the

clinical staff, orthopedics and the pharmacist, Mr. Seys regarding his need for medication to control his pain. Mr. Seys appears to not believe in Mr. Israel's claims and seemed to take action toward making sure he was not allowed this medication. The orthopedic doctor stated he would be willing to prescribe the fentanyl patches and was willing to discuss further with the other parties.

As part of the concessions related to Mr. Israel's chronic pain condition, he was provided in the past with a special mattress and additional pillows. In the past year, there have been several incidences resulting in transfer to the Special Housing Unit (SHU). Mr. Israel was very dissatisfied with the health care he was receiving, particularly as relates to his chronic pain, and these transfers were a result of what apparently was considered bad behavior.

### **Mental Issues**

Complicating the issue of his chronic pain is his depression. Mr. Israel's has been treated for many years and as mentioned previously was first placed in SHU on July 2, 2008 following a self-reported suicide attempt on June 30, 2008.

On January 5, 2009, Mr. Israel was prescribed Seroquel and Zyprexa for the bipolar diagnosed. These medications were to be tapered. On January 20, 2009 medication renewal included Quetiapine for bipolar disorder. There was a forensic study performed to rule out bipolar disorder. Progress was not noted to be improved on the medications of January 5, thus, the bipolar issue was consider to be resolved.

In October 2010, Mr. Israel was given Sertraline by Dr. Owens. In January 2012, Elavil was added. A clinical encounter note on February 10, 2012, noted diagnosis of dysthymia and Zoloft was prescribed. Amitriptyline was added due to the chronic debilitating pain secondary to his chronic back pain. There was notation that Mr. Israel "seems less engaging due to pain issues".

Between July 17, 2012 and October 30, 2012, Mr. Israel completed several behavior classes including anger management, responsibility, and stress management class. On October 30, 2012 it was determined Mr. Israel no longer met criteria for Class – 2. There had been no hospitalization or suicide ideation in approximately five years and there has

been no mania. He was also determined to be on medication which adequately treated his depression.

Mr. Israel presented to the clinical service on January 29, 2013 to have his Nortriptyline renewed and was not allowed due to his being inappropriately dressed in shorts. The next available appointment was to be made. On February 12, 2013, he was seen in the clinic for renewal of his prescription. He was to have been administered the Nortriptyline in the "pill line" and the Zoloft was given as a self-carry medication.

### **Coronary and cardiovascular disease**

Mr. Israel has had a transient ischemic attack (TIA), angina with stent placement in his left anterior descending artery. Both of these conditions were treated appropriately in the past. The sick sinus syndrome with complete heart block was diagnosed in 2004 with a pacemaker placed in 2004. An abnormal stress test in June 2008 resulted in a PTCS with bone metal stent to left anterior descending artery.

In 2013, Mr. Israel indicated some problems and felt the battery associated with his pacemaker needed a battery replacement. The records indicate that, after a delay, Mr. Israel was sent for this procedure. The original pacemaker was inserted on February 20, 2004 and a new St. Jude model was inserted on April 19, 2013. Within a reasonable time he was returned to Butner. Unfortunately, there was apparent refusal or "confusion" by medical personnel at Butner to remove his sutures within the recommended 7 days, and the pacemaker site became infected. Mr. Israel's condition worsened and he was re-hospitalized.

The pre-op was done at University of North Carolina on May 20, 2013 prior to pacemaker removal following infection following replacement on April 19, 2013. Physicians at this time noted Mr. Israel's medical history to include chronic pain secondary to multiple spinal surgeries. His medication included Fentanyl, Methadone and Pregablin as well as Niacin, Nortriptyline, Steraline and Simvastatin. In the area of his cardiac health he was noted to have symptomatic bradycardia and hyperlipidemia. Psychiatric history included depression.

On May 21, 2013 an infected pacemaker pocket was excised, debrided, and the pacemaker removed. The surgeon was unable to remove the right atrial lead despite repeated vigorous efforts. There were complications of pericarditis, acute kidney injury, chronic pain, anemia and cellulitis. Medications were extensive and varied slightly from those noted above:

- Simvastatin
- Niacin
- ASA
- Metoprolol succinate
- Senna
- Calcitrate and Vitamin D
- Sertraline
- Nortriptyline
- Oxycodone
- Colace
- Lyrica
- Acetaminophen

It should be noted that records indicate that on May 27, 2013, Mr. Israel was ready to be discharged back to Butner; however nursing staff tried calling “but no one in entire facility picking up phone – will call tomorrow for discharge”. A discharge plan was discussed and faxed to Tammy Conrad at Butner. Mr. Israel was officially discharged on May 28, 2013.

A Zio Patch monitor report was completed between May 28, 2013 and June 11, 2013 and it showed less than 1% ventricular ectopy. Metoprolol succinate was added due to the dizziness and palpitations Mr. Israel was experiencing. This was felt to be likely vasovagal. A second patch monitor showed PVCs and a very brief burst of atrial arrhythmia, although there was no heart pauses. Thus, it was felt no replacement pacemaker would be needed at this time and that the medication would help with the palpitations.

Mr. Israel experienced a deterioration in his health following his recent hospitalization for pacemaker removal and pericarditis. He was experiencing an extreme level of pain and swallowed his fentanyl patch in July 2013. As result of this action on his part, his pain medications were discontinued. By August 18, 2013 Mr. Israel was placed in SHU with a diagnosis of depression. He was noted to have frustration over his medication and the recent discontinuation of his pain medication. There were no symptoms of mania, psychosis or plan/intent for suicide. In his first placement in SHU, Mr. Israel was confined for over 100 days, with release finally occurring in November 2013. The second placement in SHU occurred in late December and was for another at least four weeks. During his time in this isolation, he not provided his pain medications, nor any other medications resulting in great mental anguish.

Although placement in the SHU is for a variety of reasons including potential suicide risk and as a consequence for behaviors considered inappropriate by the authorities at Butner, there are significant medical consequences for Mr. Israel in that the facility in SHU involves a small cell around 12 feet by 6 feet. There are no allowances for his special needs involving his chronic pain and there is near total isolation. Inmates are allowed one hour of exercise in a larger cage of 15 feet by 10. This time was spent with multiple other inmates creating a minimal amount of space for effective "exercise".

Mr. Israel has appealed to innumerable authority figures within Butner in order to plead his case, without complete success. He is in need of both cardiac and orthopedic evaluations, however is refusing in that he cannot handle the pain associated with the transfers to the outside specialists. There is a true Catch 22 for Mr. Israel at this time. Without some resolution, his mental condition will continue to deteriorate due to his pain. There is mention of visits to various clinical services within Butner particularly as relates to his chronic pain as recently as December 24, 2013. There is additional correspondence from Mr. Israel related to his current health condition and deteriorating state of mental health.

### Definition of Life Expectancy

“Life expectancy” is an actuarial calculation which determines “the average future lifetime” of someone currently at age  $x$ , and is denoted by the symbol  $e_x$ . It is *not* an estimate of how long or to what age a person will live. The formula is the same as that of a straight life annuity, denoted by the symbol  $a_x$ , but without a discount rate, i.e.,  $i = 0\%$ . In formula form life expectancy is:

$$e_x = \sum_{t=1}^{\omega} {}_t p_x$$

where  ${}_t p_x$  is the probability of living from age  $x$  to age  $x+t$ , and runs to the end of the assumed mortality table (terminal age  $x=\omega$ ), which is some age greater than 100 for all recent tables. The Greek letter Sigma ( $\Sigma$ ) indicates a sum, or an addition of all the probabilities behind the sign.

Essentially, a life expectancy (LE) is the point in time at which 50% of a like cohort of 1000 individuals with the same medical condition, gender and age will have passed away. However, it is important to understand that any one individual can statistically die anywhere along the mortality curve. No one can accurately predict the exact day on which a given person will expire. It is not unlikely for persons to live past their given LE, or even die before the given LE. Life expectancies are a point in time estimate of how long and to what age a person has roughly a 50/50% chance of living to. It is based on actuarial mathematics applied to a “standard” (i.e., ‘healthy lives’) mortality table which has been modified to reflect a person’s individual health profile. The assessment of the individual’s health is made by a professional familiar with the probable impact on otherwise healthy mortality due to various impairments and disease, and combinations thereof. LE’s can be determined to be ‘reasonable’ (or not) based on the credibility placed on the input mentioned above for any one person. The probability of someone dying “on time” at their exact estimated LE is miniscule, which is why the concept of reasonableness must be applied in all cases. There is such a thing as a wrong LE. For example, an 85-year old with impaired health could not have a calculated LE of 15 years: this is wrong.

Alternatively, a healthy 85-year old could not have a legitimate LE of one year; this is also wrong.

An LE is the result of a reasonable, supportable process. A mortality percentage is the percentage by which a given person is more or less likely to expire relative to a baseline standard mortality percentage of 100%. Debits are percentages of extra mortality based on one's health profile, with one debit equal to 1% extra mortality above standard (100%), or healthy mortality. If a person suffers from impairments that increase mortality, then the mortality percentage is increased above 100%. If a person is very healthy, then the mortality percentage will be below 100%.

No one knows exactly when any one individual will die, nor is a life expectancy or total mortality rating intended to suggest the time until death will be near the life expectancy. For a variety of reasons any one individual might live much longer (or much shorter) than forecast by the underwriters' projections. With small groups of insured lives, and particularly with a single insured life, the actual time until death may be significantly different from the life expectancy or that predicted by any particular mortality table. The choice of mortality table used to calculate the life expectancy for Mr. Israel is the 2008 Valuation Basic Table, male, nonsmoker age last birthday. This is the most recent life insurance table published by the American Academy of Actuaries, and is used as a basis for pricing life insurance products by many U.S. life companies. Although Mr. Israel is not applying for life insurance now, nor would he likely qualify given his current health status, this table is useful for calculating life expectancies. Bergstrom modified the published mortality rates to account for estimated future mortality improvement from 2008 to 2013. The factor chosen was 0.50%/year. This effectively lowers the table mortality rates by 2.48%. Further, mortality rates from 2013 and forward were also improved by 0.50% for twenty years.

**Summary Conclusion**

Mr. Israel has significant and chronic conditions affecting both his mortality/morbidity and ultimate life expectancy. In the original assessment of 2008, there were extensive medical records from his personal physicians detailing the long history of chronic pain, depression and cardiac conditions. It is felt that Mr. Israel has developed a degree of institutionalization, not unusual for individuals incarcerated. However, his overall health deterioration in 2013 has resulted in a remarkable and dramatic decline in both his mental and physical condition. While paranoia is not uncommon in this environment, there appears to be a determined campaign by some within Butner to exacerbate his conditions which have resulted in reactions. The removal of medication determined to be effective over many years as a result of the episode involving the eating of his fentanyl patch and the unauthorized placement of another patch highlights the mental deterioration being experienced by Mr. Israel.

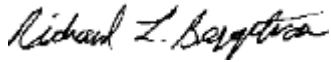
In conclusion, Consultants conclude and concur that a life expectancy of 233 months is reasonable and supportable for Mr. Israel given his medical history as provided and his current state of health. This is based upon Mr. Israel's risk assessment at 400 debits (500% total mortality), which represents a high substandard risk rating. These debits applied to the most recently published life insurance table would result in an estimated life expectancy of 19.4 years.

### **Limitations and Reliances**

Consultants relied on the information provided to them by Landry to be accurate and complete. If the data is not accurate or complete, the ultimate analysis of the data may be impacted.

A handwritten signature in blue ink that reads "Anna R. Hart". The signature is written in a cursive style and is positioned above a horizontal line.

Signed on March 13, 2014  
Cisco, Texas 76437

A handwritten signature in blue ink that reads "Richard L. Bergstrom". The signature is written in a cursive style and is positioned above a horizontal line.

Signed on March 13, 2014  
Bellevue, WA 98008